

# INTERIM REPORT

OF THE

# COMMITTEE ON THE PUBLIC ACCOUNTS.

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BROUGHT UP 7<sup>TH</sup> SEPTEMBER, 1870, AND ORDERED TO BE PRINTED.

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WELLINGTON.

—  
1870.

## ORDERS OF REFERENCE.

*Extracts from the Journals of the House of Representatives.*

FRIDAY, THE 17TH DAY OF JUNE, 1870.

*Ordered*, That a Select Committee be appointed to examine into and report upon questions relating to the Public Accounts; the said Committee to consist of Mr. Curtis, the Hon. Mr. Fitzherbert, Mr. Gillies, Mr. Kelly, Mr. Macfarlane, Mr. Peacock, the Hon. Mr. Stafford, and Mr. Stevens.

(On motion of the Hon. Mr. Vogel.)

A true extract,

F. E. CAMPBELL, Clerk, House of Representatives.

TUESDAY, THE 21ST DAY OF JUNE, 1870.

*Ordered*, That the names of the Hon. Mr. Hall and the Mover be added to the Committee on Public Accounts, and that five be the quorum of the Committee.

(On motion of the Hon. Mr. Vogel.)

A true extract,

F. E. CAMPBELL, Clerk, House of Representatives.

FRIDAY, THE 24TH DAY OF JUNE, 1870.

*Ordered*, That the Committee on Public Accounts have power to call for persons, papers, and records.

(On motion of the Hon. Mr. Vogel.)

A true extract,

F. E. CAMPBELL, Clerk, House of Representatives.

TUESDAY, THE 5TH DAY OF JULY, 1870.

*Ordered*, That the duties of the Committee on Public Accounts be defined as follows:—

1. That in addition to the work of dealing with any special references which may be made to it by this House, it shall be within the functions of the Committee on Public Accounts—

- (a.) To examine annually the Accounts of the Receipts and Expenditure of the Colony, and to bring under the notice of this House any items in those Accounts, or any circumstances connected with them, to which it may consider the attention of this House should be directed.
- (b.) To report to this House any alteration which may appear to the Committee desirable to be introduced in the form of the Public Accounts, or in the mode of receipt, control, issue, or payment of the Public Money, or in the form of the Estimates, or Appropriation Act.
- (c.) To inquire into and report upon any differences which may arise, or have arisen during the preceding year, between the Treasury and Controller, and the Treasury and Auditor-General.
- (d.) To inquire and report upon any differences arising between the Treasury and the Government of any Province or County respecting the Accounts between the Colony and the Province, or of any charges made therein.

2. That when any references mentioned in the previous sub-sections are made to the Committee, the actual points of reference upon which the opinion of the Committee is sought should be clearly and definitely expressed.

3. That the Committee should refrain from dealing with questions of a political nature.

(On motion of the Hon. Mr. Vogel.)

A true extract,

F. E. CAMPBELL, Clerk, House of Representatives.

FRIDAY, THE 8TH DAY OF JULY, 1870.

*Ordered*, That the following be added to section 1 of the resolutions defining the duties of the Committee on Public Accounts:—

- (e.) To inquire into any question referred to it directly by the Treasury.

(On motion of the Hon. Mr. Vogel.)

A true extract,

F. E. CAMPBELL, Clerk, House of Representatives.

TUESDAY, THE 16TH DAY OF AUGUST, 1870.

*Ordered*, That the quorum on the Public Accounts Committee be reduced from five members to three members for the remainder of the Session.

(On motion of the Hon. Mr. Fitzherbert.)

A true extract,

F. E. CAMPBELL, Clerk, House of Representatives.

## INTERIM REPORT OF THE COMMITTEE ON PUBLIC ACCOUNTS.

YOUR Committee have had two letters referred to them from the Superintendent of Otago, claiming reimbursement from the Colony of the amount expended by the Provincial Government on the Geological Survey of that Province. In one of these letters the Superintendent also requests that directions may be issued to Dr. Hector to the effect that the "Geological Survey of Otago may be completed according to the terms of his agreement."

Your Committee, having examined the Superintendent of Otago, the Hon. Captain Fraser (formerly Deputy Superintendent of that Province), and Dr. Hector, and having had before them the agreement between Dr. Hector and the Agents in Scotland of the Provincial Government of Otago, together with other documents, beg leave to report as follows:—

1. An agreement was entered into in Edinburgh, in December 1861, between Dr. Hector and the Agents of the Otago Government. The first article of this agreement provides, "That the said James Hector shall devote his whole time and capabilities in making and bringing to a completion, and furnishing the said Superintendent and Provincial Council with, an accurate Geological Survey of the said Province, and shall deliver the same, with all necessary plans, sections, and others, to the said Province of Otago; said engagement to continue for the period of three years from and after the 1st day of January, in the year 1862, and he shall from time to time, as he may be required, furnish to the said Superintendent reports of his proceedings, it being declared that the said James Hector shall be allowed to conduct his examination of the Province in any manner he may deem best suited for a scientific geological reconnoissance, subject however to the approval of the said Council and Superintendent in the matter of expenses; and the said James Hector shall also be entitled to publish the results of his investigation for general, scientific, or geological purposes:" and the fifth article stipulates, "That the said James Hector shall furnish, at the completion of the survey, specimens of all minerals descriptive of the results of the investigation made in virtue hereof, and of the mineralogical formation of the Province."

2. In pursuance of this agreement, Dr. Hector left England in December, 1861, arrived in Otago on the 13th April, 1862, and remained in the service of the Provincial Government until the 1st of April, 1865. It is admitted on all hands that, during the period of his residence in Otago, the whole of his time was devoted to the service of the Province. The manner in which he was occupied is fully stated in the annexed memorandum.

3. When he left the service of the Provincial Government he entered that of the Colonial Government, and has since been engaged in the Geological Survey of the Colony at large. Both Dr. Hector and other members of the Geological Staff have occasionally been engaged in the Provinces of Otago and Southland. It is not alleged that any objection was raised by the Provincial Government to Dr. Hector's resignation: the period of service stipulated in his agreement had expired. *Vide Appendix,*  
p. 15, No. 4.

4. With respect to the amount of money which the Province of Otago has actually expended on the Geological Survey, the statements laid before your Committee are conflicting. An account furnished by the Superintendent puts the amount at £13,890 17s. It seems probable, however, from an inspection of the account itself, as well as from a memorandum furnished by Dr. Hector, that the £13,890 17s. includes disbursements not fairly chargeable against the Geological Survey; for instance, an item for buildings, £1,287 5s. 4d., can hardly be so chargeable. In the event, therefore, of any adjustment of account between the Colony and the Province for this outlay taking place, a statement in detail of the items of which this account is composed would have to be furnished.

5. As the Superintendent, in the letter in which he transmits copy of the agreement with Dr. Hector, requests that that gentleman may be directed to complete the Geological Survey of Otago, "in terms of his agreement," your Committee have directed their attention to this question. The agreement provides, "That the said James Hector shall devote his whole time and capabilities in making and bringing to a completion, and furnishing the said Superintendent and Provincial Council with, an accurate Geological Survey of the said Province, and shall deliver the same, with all necessary plans, sections, and others, to the said Superintendent of the said Province of Otago; said engagement to continue for the period of three years from and after the 1st day of January, in the year 1862; and he shall from time to time, as he may be required, furnish to the said Superintendent reports of his proceedings, it being declared that the said James Hector shall be allowed to conduct his examination of the Province in any manner he may deem best suited for a scientific geological reconnoissance, subject however to the approval of the said Council and Superintendent in the matter of expenses; and the said James Hector shall also be entitled to publish the results of his investigations for general, scientific, or geological purposes." The question raised by the Superintendent is whether this part of the agreement has been carried out.

The statements of the results of his labours, which Dr. Hector actually has furnished to the Provincial Government, appear to be as follows:—

1. 27th August, 1862.—Report relative to the distribution of Gold in the Province.—(Published.)
2. 25th September, 1862.—Progress Report.—(Published.)
3. April, 1863.—Report of first Expedition to West Coast.—(Published in newspaper.)
4. 8th June, 1863.—Progress Report of West Coast Expedition.—(Published.)
5. 5th November, 1863.—Report of second West Coast Expedition.—(Published.)

6. 13th April, 1864.—Progress Report, with full details respecting the minerals, coals, fossils, plants, &c., which had been discovered up to date.—(Published.)
7. 21st October, 1864.—Progress Report.—(Published.)
8. Various official Letters.—(Published in newspapers.)
9. January, 1865.—Descriptive Catalogue of Geological and other Collections in the Exhibition.
10. 5th February, 1866.—Various Papers in the Jurors' Reports, and Supplement to Class I., which gives minute account of mineral and other natural productions of the Colony then known, and especially of those in Otago.
11. April, 1865.—Geological Map of the Province of Otago—scale, 8 miles to inch—showing results of reconnaissance survey up to date, and giving a large amount of original topographical details. This map was specially compiled for the geological survey, as, at that time, no complete topographical map of the Province was in existence. (Unpublished.)
12. Map of the North-west District of the Province, showing the surface configuration, with special relation to the opening of communication with the land fitted for settlement on the West Coast.—(Unpublished.)
13. Ten Geological Sections, illustrating the structure of the Province.—(Unpublished.)
14. Seventeen large Sketches and Views, illustrative of the geological features of Otago scenery. (Unpublished.)

In addition to the above, an extensive collection in every branch of natural history within the Province was made by the Geological Staff, has been arranged by Dr. Hector, and is now deposited and displayed in the Museum at Dunedin. This collection is admitted to be exceedingly valuable, as illustrating the geological and other resources of the Province.

Your Committee are informed that the Geological Survey Staff of the United Kingdom, proceeding on the assumption that the results of a geological survey can be reported better in a geological map than in a written report, do not, as a rule, furnish any other report of their labours than a map of this description, with marginal notes.

Your Committee are of opinion, after a consideration of the above facts, that Dr. Hector cannot be said to have failed to carry out his agreement with the Otago Government.

It is stated by Dr. Hector that he has not, during the time he was in the service of the Provincial Government, or, with one exception, since he left it in 1865, been asked for any other report than those above enumerated. Subsequently, however, to the above date, he forwarded to the Provincial Government the sketch of a further report of the results of his labours in Otago, which it was his intention to furnish, and this report was asked for in October, 1865. A considerable portion of the information intended to be included in that report has since been published in other documents, and it will be seen from the memorandum (A), that Dr. Hector believes it will be for the interest of the Province that his final report should be deferred until further field investigations in other parts of the Colony have been completed.

6. With regard to the general question of the claims now made on behalf of the Province of Otago, it appears to your Committee, upon a careful consideration of the evidence taken by and the documents submitted to them, of the value of the maps supplied, and of the mineralogical and other collections made by Dr. Hector, as well as of the information obtained by him as to the resources of the Province, and particularly of the western portion of it, that the Province of Otago has received full value for the sum expended on the Geological Survey. This conclusion still, however, leaves open the question whether, as the Geological Survey of other parts of New Zealand is now being completed at the cost of the Colony, some allowance should not be made to Otago on account of that portion of the general work which has been done at her expense.

7. Your Committee respectfully submit that this question is not one which can be settled by the application of any principles already laid down by the Legislature for the adjustment of the financial relations of the Colony and the Provinces, and that it is, therefore, not one for your Committee to determine. They conceive that they can best discharge their duty, in the present instance, by submitting, as they have endeavoured to do in this report, such a statement of the facts and circumstances of the case as will enable the Legislature to arrive, without difficulty, at a fair and just conclusion.

8. They think it right to point out if an allowance is made, for the reasons above stated, to the Province of Otago, claims from other Provinces for similar services will have to be entertained.

9. Your Committee append to this report minutes of the evidence taken by them, as well as various memoranda bearing on the subject of this inquiry.

7th September, 1870.

JOHN HALL,  
Acting Chairman.

*Papers appended to Interim Report of the Public Accounts Committee, dated September, 1870.*

1. Evidence of His Honor James Macandrew.
2. „ The Hon. Captain Fraser.
3. „ Dr. Hector.
4. Letter from His Honor James Macandrew, to the Colonial Treasurer, dated 27th July, 1870.
5. Letter from His Honor James Macandrew, dated 9th August, 1870, enclosing copy of Agreement with Dr. Hector.
6. Memorandum from Deputy Superintendent of Otago, containing statement of expenditure, on account of Geological Survey, by Province of Otago.
7. Memorandum by Dr. Hector, concerning the Geological Survey of Otago.
8. Remarks on the Account of Expenditure forwarded by the Provincial Government.
9. List of Reports, Maps, &c., furnished by Dr. Hector to the Provincial Government of Otago.

## MINUTES OF EVIDENCE.

Mr. Macandrew in attendance, and examined.

(References from Mr. Macandrew to the Colonial Treasurer, relative to the claim of a refund of £13,000 paid for Dr. Hector's Geological Survey of the Province of Otago, having been read),

1. *Mr. Hall.*] What is the amount of your claim?—About £13,000. I think that is rather over the actual expenditure.

2. Have you got an account of this expenditure?—I cannot produce the account. I have not got it with me.

3. Is it in Wellington?—No; I have not got the full particulars. I have got an account in round numbers.

4. *Chairman.*] You cannot give us any of the items?—I have not got an account of all the items.

5. Could they be telegraphed for?—Yes; I can telegraph for them. I telegraphed for the gross amount.

6. *Mr. Hall.*] Can you, at the present time, give the Committee any idea as to how this £13,000 was expended. It seems a large sum?—There is Dr. Hector's salary.

7. That is £700?—Yes, I think it is. There were also the expenses of his outfit.

8. *Chairman.*] There were also his assistant's?—Yes; himself and his assistant were brought out from home. There is also his trip to the West Coast. He had a vessel at his disposal, I do not know for how many months.

9. *Mr. Hall.*] The salary of Dr. Hector, I think, is here (referring to a document) put down at £800?—Yes; and I think his assistant's was £300; but I think it would be better that I should furnish a full account.

10. The period of his agreement was for three years?—I think it was fully three years.

11. Not more?—Not more.

12. When did he come here?—In December, 1861, I think.

13. *Chairman.*] He came to Wellington in 1865?—Well, he must have been over three years.

14. *Mr. Hall.*] Then there was his outfit?—Yes.

15. *Chairman.*] He had a schooner, you say, on the West Coast?—That would be a very material amount, as he was accompanied by I do not know how many men, tents, and horses, and you can easily see how the amount would run up, especially paying men, in those days, 12s. and 14s. a day for wages.

16. *Mr. Hall.*] Did I understand you to pay for the expedition as part of the Geological Survey?—I consider it was part of the Geological Survey.

17. Was it not rather an exploring expedition?—It was with a view of ascertaining the geological resources of the country.

18. Has Dr. Hector furnished a report of that expedition?—There is a report of his journey, but no geological report that I am aware of.

19. Could you give the Committee some idea of what Dr. Hector has done for this £13,000?—Well, nearly the principal portion of the work he has done consists of a very valuable collection of minerals.

20. Where are they?—They are in the Museum of Otago. Of course there are duplicates of them here, in this Museum.

21. *Mr. Stevens.*] Is it not a fact, as I apprehend, that Dr. Hector's field book would show that he did more work than collecting minerals,—that there were other results?—The practical proof of the value of what he has done may be found in the circumstance that the Provincial Government of Otago is now in treaty with the Government of Victoria for a geologist to come down and complete the survey. The Provincial Government is now contemplating an expenditure of £2,000 for the purpose of completing what Dr. Hector undertook to do by this agreement.

22. *Chairman.*] For completing the survey?—For reporting, in fact.

23. The Committee understand this, that the Province of Otago considers the work already done, although incomplete, so valuable, that they are desirous of having it completed by some other means?—I do not know that Dr. Hector's work would be of any value to this geologist who is coming over.

24. If done well so far, then you cannot but attach a value to it, and think it would be well to expend more money to complete it?—I think that Dr. Hector's services would be of some avail.

25. *Mr. Hall.*] Who is the geologist you are about employing?—Mr. Ulrich, who is very highly spoken of in Mr. Brough Smythe's excellent work on the gold mines of Victoria.

26. What position does he occupy?—He is on the Geological Staff of Victoria. If you refer to Mr. Smythe's valuable work, you will find him very highly spoken of. If I had known what you wanted, I would have put my evidence in writing.

27. What we want to ask you is, can you tell what Dr. Hector has furnished in the way of reports?—No, I cannot tell. All I can tell is, that there is no official report in the terms of the agreement,—no report of any practical utility, so far as a geological knowledge of the Province is concerned. It is with a view of procuring such a report we are going into the expenditure.

28. Are you in a position to say that?—That is my opinion: you will get plenty of evidence to the same effect. I would suggest that you should call more witnesses who would be better able to speak from a geological point of view than I can. The Hon. Captain Fraser is, I believe, a geologist, and he can give evidence on the subject.

29. Does he know?—He has a better idea of what Dr. Hector has done. I think you would get more information from him than from me as to the actual work that he has done.

30. So much with regard to reports; now with regard to maps. Has he furnished any maps?—I am not aware that he has furnished any to the Province of Otago.

31. Are you aware whether Dr. Hector, during the period of his engagement in Otago, had been put upon any special works that would have interfered with his survey?—I am not aware. I think he was entirely his own master.

32. ?—I dare say Major Richardson could give evidence upon that point. Mr. Haughton and other gentlemen know a good deal of the practical results? They will know the common feeling amongst the mining population on the subject.

33. *Mr. Hall.*] We want facts, not what they could say. You say that the work has not led to the discovery of the gold fields?—Of course he cannot be blamed for that. I believe it has not led to the discovery of gold fields; on the contrary.

34. You were speaking of no report having been furnished. Are you aware whether there has been any application made for such a report?—I am not aware.

35. By the Province of Otago?—I am not aware. I think it is very likely that there has been, but I am not conscious of it.

36. Of your own knowledge you are not aware whether any application has been made?—The subject has been frequently talked of in the Provincial Council.

37. You have not, since you have been Superintendent of the Province, made any application to him?—No.

38. Can you state under what circumstances Dr. Hector left the service of the Province?—I cannot say.

39. You do not know whether he resigned or was transferred?—I do not know.

40. *Mr. Macfarlane.*]—Who would know that?—Mr. Harris. Mr. Balfour was translated or removed about the same time.

41. *Mr. Hall.*]—Is that all?—I desire to lay special stress upon the fact of having to engage this Mr. Ulrich. The reason why he is not at work at present is because it is the wrong season.

42. Can you tell the Committee why it is necessary that you should engage Mr. Ulrich?—I can only state that we are ignorant of the geological resources of the country from a professional point of view.

43. Would it not be more prudent to apply to Dr. Hector for a report before engaging this geologist?—I think it is very likely we should be better satisfied with a report from another party.

44. From some one else?—Yes; I know that the impression is that we would be more satisfied by having a report of that person to whom I refer, from Victoria, Mr. Ulrich. It is believed that he is practically conversant with the geological features of the country.

45. Do you mean as regards gold digging alone?—I mean gold digging. I may mention one reason why we are so anxious. We intend spending money in making reservoirs and water-races, and we must be guided by the geological indications as to where the gold is likely to be permanent.

46. *Mr. Macfarlane.*] I have seen a map, by Dr. Hector, of your Province. There is a map here of his survey. I have seen one with gold, silver, and coal indications marked. I understood it was part of the public property?—Well, I have not got it.

47. If you applied you could get a copy?—I am not aware.

48. *Mr. Hall.*] What salary do you propose to give Mr. Ulrich?—So much a week. I expect it will cost, including assistants, £2,000.

49. *Chairman.*] When Mr. Selwyn was geologist of Victoria I think it was £5,000?—It was done by contract; he paid for the men and assistants.

50. *Mr. Macfarlane.*] (Map produced by Clerk of Committee.) That is not the map I referred to; the one I spoke of had marked the indication of gold and silver. (*To Witness.*) Your contract originally was for three years?—Yes.

51. Was he fully occupied with you the whole of the time?—Yes.

52. Did he do anything for himself?—He did nothing for himself.

53. Was he exclusively occupied in the work of his department?—Yes.

54. Was it from any fault of his that the survey was not completed in three years?—On that I cannot express an opinion.

55. You must come up to that point?—I believe he was occupied all the time; whether from any fault of his the survey was not completed I cannot say.

56. You have no fault to find?—I have no fault to find. All I complain of is, that we have not got the report for which we stipulated.

57. Did you get an interim report?—I do not know of any report. I believe, in the "Proceedings of the New Zealand Exhibition," you will find certain statements of Dr. Hector, but they are of a desultory character.

58. *Chairman.*] Was it with the assent of the provincial authorities of Otago that Dr. Hector left the service of the Province?—That I am not aware of, but it can be easily ascertained.

59. *Mr. Macfarlane.*] Did he give the requisite notice, according to the terms of his agreement?—That I do not know.

60. How long was he with you?—He must have been three or four years.

61. Was he only to remain three years, finished or not finished?—I take it that under that contract he was bound to supply us with a report in three years.

62. But if he could not do it?—I imagine that he was bound under the agreement. You can read it.

63. I have read the agreement, and that is why I ask the question. He was bound to give you six weeks' notice at the end of the three years. There is only a clause of a preferential claim to his services against any other Province. Do you not know whether he gave that notice: whether he asked to continue, and you refused to do so?—He will be able to answer that himself. If it is necessary, I can obtain information as to the circumstances under which he left the service.

64. Will the survey which Dr. Hector has so far made dovetail in with the general survey of the Colony?—I should say so; I think it would be of very little value if it does not. We are bound to think his services as valuable there as elsewhere.

65. From the way you express yourself are we to understand that, practically, except the Museum, his work is valueless?—Unless he completes it.

66. I do not think you have made out a claim?—It is hard that we should have to pay one-third towards the general survey of the Colony after paying what we did.

67. *Chairman.*] I take it that what you mean is this: that if we are to have a geological survey of the Colony, you are not to be asked to pay your contingent of the whole without having a refund of the amount expended?—Yes, I think it is but reasonable; or to let us have the completion of the thing as a test of whether the past work has been useful.

68. Dr. Hector was only to work for you while with you. You have no right to ask him to work after the three years?—You will find that he was bound to give us a report at the end of his engagement, according to his agreement.

69. *Mr. Stevens.*] Do you consider that it would be right that the Colony should refund to the Province of Otago the expense of the survey, and, at the same time, that the Province of Otago should have Dr. Hector's survey completed under the present financial arrangements?—The Province claims to be refunded because Dr. Hector did not complete his survey. They are now making arrangements to finish that survey, but I would be quite content that it should be finished by Dr. Hector. Of course, it must be finished by him, or under his control, if it is to form part of the general survey.

70. Would that interfere with the arrangement made by the Provincial Council with Mr. Ulrich?—I do not think so, as it can be receded from.

71. *Mr. Macfarlane.*] Did Dr. Hector leave his assistants with you?—No, I think not. I think the whole establishment ceased with his leaving.

72. And has nothing since been done to complete the survey which he began?—No.

73. Did Dr. Hector supply any specimens of minerals during his survey?—Yes, a very valuable collection, half of which, or rather duplicates of which, are in the Colonial Museum here.

74. *Mr. Hall.*] Did Dr. Hector go down to Otago to arrange the Museum there, after he had left the service of the Province?—I think not. I think he did at the Exhibition, but not since then; Captain Fraser will be able to explain, as he is Chairman of the Geological Society there.

75. Has Dr. Hector told you that he must complete a survey of the Colony before he could give you a report of your Province, and that upon the completion of the survey he would give you a map?—I am not aware. About the arrangement of the specimens of the minerals, I think it has cost about £400 to the Province to put them as they are now.

76. Do you mean the cost of arranging?—Arranging and classifying them, and the cost of cases. I know that Dr. Hector was in Otago a few days, but I would not be sure whether he gave any assistance or not.

77. That was the other day?—I know he was not there except for a day or two?

78. *Chairman.*] Were you asked why Dr. Hector left the Province?—I do not know; I can send down and get the particulars.

79. Do you consider the Mineralogical Museum at Otago of value, and if so, of what value?—It would be impossible for me to say. I believe it is of great value, but I cannot say of what value. Of whatever value the specimens may be, the Colony has got the benefit of them as well as the Museum here.

80. Will you please get the particulars of this £13,000, and how far the assent of the provincial authorities was given to Dr. Hector being removed to the service of the General Government pending the non-completion of his work?—I shall get those particulars.

Captain Fraser in attendance, and examined.

81. *Mr. Hall.*] You were Deputy Superintendent of the Province of Otago for three years?—Yes.

82. And also connected with the Geological Museum?—Yes.

83. Are you conversant with the circumstances under which Dr. Hector was engaged by the Province of Otago?—No; I have no particular cognizance of the circumstances, further than that I am aware, from common report, that the Provincial Government went to the expense of bringing out Dr. Hector and employing him at a cost of £13,000 to the Province.

84. We have been given to understand that you can give the Committee correct information in regard to the general character of Dr. Hector's work?—Well, so far as the Museum is concerned, he has done a great deal. We have specimens of all the geological formations of Otago. I may say that, with a few exceptions, the whole collection of our Museum is due to Dr. Hector. But what we principally wanted was a report of his work, and that I believe we have not got.

85. A report of his proceedings?—A full report upon the geology of the Province; that is, explaining the geological formation of it.

86. Do you know what Dr. Hector has done, and how long he was there?—I cannot tell, as I was absent from the Province for some time.

87. We have been told that you could give us better information as to what he has done?—I may say that what he has done will be found more in the Proceedings of the Royal Geological Society in England than in Otago. I made inquiries of a similar nature in Victoria when Mr. Selwyn was in charge of the Geological Department there. I inquired where his report could be found, but I could find no trace of it, except in the Proceedings of the Geological Society. I except his very admirable geological maps. It appears to me that these gentlemen write more for the information of people at home than for the people of these countries.

88. Do you know whether he has furnished any report to the Provincial Government?—I am not aware that he has furnished any report; I know that that is the complaint. I only know that the Otago people complain that no report has been furnished. In fact, it was stated the other day, in the Provincial Council, that they had entered into a contract with Dr. Hector, and that he was bound, in a penalty of £500, to supply a report which he has not given.

89. Is that your own experience, or is it from information you speak?—I heard the Provincial Treasurer make the statement in the Provincial Council.

90. Do you happen to know how many specimens you have?—It would be impossible to say accurately. There are several thousands.

91. *Chairman.*] Are they valuable?—Very valuable, and quite sufficient for any professor to lecture upon. There are not only geological specimens but sections from deep sinking and auriferous drifts. These are all in cases, showing the peculiarities of the various auriferous drifts.

92. Do you happen to know, Captain Fraser, whether Dr. Hector was taken off the survey, at the instance of the Provincial Government, and put to other work?—I am not aware; I was absent from the country.

93. Do you remember the expedition to Martin's Bay?—Perfectly well. I found in England, in the Bank of New Zealand, a room in which there were maps of Martin's Bay. I expected, when I came back, to find that a settlement had taken place. I believe it was the jealousy which existed in some of our departments that prevented it. Owing to that jealousy, no steps were taken until Mr. Macandrew forced it the other day.

94. You mean jealousy between the provincial departments?—Yes; the provincial departments in Otago. I allude particularly to the department of the Chief Surveyor in Otago.

95. Was that expedition undertaken by the instructions of the Provincial Government?—Yes.

96. Was it done with a view to carry out Dr. Hector's duties as Geological Surveyor, or for the purposes of general exploration?—Both. Dr. Hector tested the country for gold as he went, and he gave me a small map, which had been photographed from his large map, showing the different directions in which he had found gold. He was engaged in thoroughly investigating the country, sinking shafts in every place he went.

97. *Mr. Macfarlane.*] In what capacity did you get that map?—As a private individual. I found, as I said, in a room in the Bank of New Zealand, London, a number of large maps. The people were full of the subject in England, and I imagined that when I came out I would find all the land occupied, and that I would be unable to find a section.

98. Are you speaking of the results of the expedition to Martin's Bay?—Yes.

99. Was that expedition with a view to settlement?—Yes; it was entirely Dr. Hector's discovery, I believe.

100. *Chairman.*] Was the object colonization?—Yes. Had it not been for some narrow-minded jealousies the settlement would have taken place at the time. I may mention how far those jealousies have gone when the name of Lake Te Kapo, so named by Dr. Hector to perpetuate the name of a rare bird, has been changed by our Survey Department, which has called it Lake McKerrow, after a surveyor who never, I believe, saw the lake.

101. *Mr. Macfarlane.*] Did Dr. Hector make a special report upon that visit?—Yes.

102. *Mr. Hall.*] Did he make any other reports?—There were various special reports, but no general report.

103. *Mr. Macfarlane.*] Those special reports you mean to refer to certain districts?—Yes; and portions of districts.

104. *Mr. Hall.*] Are you aware that since Dr. Hector has joined the service of the General Government he has been to Dunedin to arrange those specimens?—Yes. I was very glad to see him there, and he was kind enough to take great trouble to re-arrange the specimens. We are not perfect mineralogists down there. Dr. Hector was there for several days working hard re-arranging the specimens.

105. How long ago is that?—About six months ago. We have specimens there that are not in the Colonial Museum. Wherever duplicates could be had Dr. Hector availed himself of them.

106. Mr. Macandrew said that there were duplicates of all the specimens in the Colonial Museum?—It is quite likely that there would be sufficient to send duplicates out of the country as all our specimens were large, and Dr. Hector was obliged to make them smaller. I know we had some very valuable specimens, and he took some duplicates away with him. There were specimens containing native mercury so rich that if you took the stone and broke it, the globules would be left in your hand. The specimens, I think, were found at Post Office Creek, Waipori, so Dr. Hector informs me. I may say that we have got one very valuable map of Otago, made by Dr. Hector. It is a geological map, and is now in our Museum.

107. *Chairman.*] Did you consider it dear?—I did not consider it was dear at any price. I have often said "That map has cost £13,000."

108. *Mr. Hall.*] Do you know anything about Mr. Ulrich?—We found that we should have a geological report of our gold fields. We know that we have very large auriferous deposits in many directions, and we did not appear to be able to avail ourselves of Dr. Hector's services, so we wrote to the Colonial Secretary of Victoria, asking him to recommend to us a practical first-class geologist—one with practical knowledge, not a mere theorist—because we wanted to have a geological report of the resources of our gold fields.

109. *Chairman.*] That is to say, that, having a view to the room that there is for population, you wish the resources of your country to be known?—No; discovered.

110. What I mean to say is, whether it is with a view to the completion of a great scientific work, or with a view to attract population?—The idea originated in this way: We came up here for the purpose of borrowing a large sum of money for expenditure upon the gold fields, and it was thought requisite, before we went into this expenditure, that we should have some practical report upon the resources of the gold fields, to be a guarantee to the Government that we were not spending money in a wrong direction.

111. *Mr. Stevens.*] I should wish to know whether the primary object of Mr. Ulrich's engagement is to complete the uncompleted survey of the Province of Otago?—That I do not know; I am under the impression that it is not so. We have sent for him in order that we may get a report which will guide us in making those water-races which are necessary on the gold fields.



112. That is your impression?—It is more than an impression. I may state it as a positive fact that that was the intention.

113. *Mr. Macfarlane.*] Can that report be made from Dr. Hector's surveys?—There are great portions of the Province which Dr. Hector has not examined.

114. *Chairman.*] Supposing that such a survey could be done for £2,000, could it be done at such cost unless there were the materials for a geological map in existence?—Certainly.

115. That is, putting aside Dr. Hector's work, so far as it has gone, this could be done at the same expense?—Yes; he would find the miners at work in the different localities.

116. *Mr. Hall.*] It is a general report upon the gold fields that you want?—Of course; when Dr. Hector visited our gold fields there were very few miners who knew anything of the system of water-races. We have got money so invested to the extent of £100,000 in water-races.

117. *Mr. Stevens.*] Might I ask if you are sufficiently familiar with the terms of the arrangement with Mr. Ulrich to know how he is to be remunerated?—I am not acquainted with the arrangement in the slightest degree; it was done after I was Superintendent. I know nothing about the arrangement.

118. *Mr. Hall.*] When is he expected?—I do not know. We are bound to expend money, and, of course, it must be done under guidance.

119. I understand you to say that it is in consequence of an intention to expend money in developing the gold fields that Mr. Ulrich has been sent for?—That is my impression.

120. *Mr. Macfarlane.*] You have spoken of a map which cost the Province £13,000?—Yes; the map and the Museum. It is an accurate Geological Survey of the Province, but there are numerous deposits and auriferous reefs discovered since then. It is an excellent map, but would require now to be gone over and filled up.

121. Was it perfect at the time it was made?—Certainly. The gentleman who made it had made what was considered the best geological survey in the world, to the north of Lake Superior, and he could not give anything but a good map. It was in consequence of that he was recommended by Sir Roderick Murchison.

122. Do you know whether he was required to make this report?—No; I only know, from the general reports in Otago, that he had not made it.

Dr. Hector in attendance, and examined.

123. *Chairman.*] A claim has been made by the Superintendent of Otago for a refund of £13,000, amount alleged to have been expended upon a Geological Survey of the Province of Otago, conducted by you under a certain agreement? He has preferred his claim to the Colonial Treasurer, and the matter has been referred to this Committee for investigation.

124. *Mr. Hall.*] How long were you in Otago?—I arrived in Otago on the 13th April, 1862, and remained there, under the Provincial Government, until the 1st April, 1865. I was there a few months longer, but working for the General Government.

125. *Chairman.*] You came from England?—Yes; the date of the agreement is the date of my embarkation.

126. What was the date of your embarkation?—The 1st January. That would make the period I was with the Provincial Government of Otago three years and three months.

127. *Mr. Hall.*] What were the circumstances under which you left the service of the Provincial Government and entered the service of the General Government. Was it resignation or transfer?—The term of my agreement expired on the 1st January, but, by arrangement with the Provincial Government, I continued until April.

128. *Chairman.*] Was it with the assent of the Provincial Government that you left the service of the Province; were the authorities consenting parties; did they put the same interpretation upon the contract, and were they willing that you should leave?—I do not think I ever asked them. I do not remember.

129. Did they protest against your leaving?—Certainly not. I received no protest. The arrangement relative to my services being transferred to the General Government had been contemplated, intimated to the Provincial Government, and agreed upon, many months previous to the expiration of my agreement.

130. Without any objection?—There was no objection; quite the reverse, as it was understood that the Province would still have my services in common with the rest of the Colony.

131. With regard to the cost, Mr. Macandrew stated that the expense of the survey was £13,000. Is that accurate?—Certainly not. I do not know the sums expended, but I believe the actual sum expended on the survey was £6,500. An extra sum of about £1,200 was on account of expenses I had to incur in my department at the New Zealand Exhibition and on the West Coast, making a total of £8,700. I have had no access to any accounts but those which passed through my own hands.

132. What is your opinion about the Martin's Bay expedition?

133. *Mr. Hall.*] Before putting that question, I should wish to ask if you have been put on to any other work than the Geological Survey during the time you were in the service of the Provincial Government?—Well, the Chief Surveyor suggested that there should be a joint survey, conducted by him and myself, on the West Coast of the country, and that occupied me a very long time. Of course, I gave my attention to every kind of observation that would be useful to the Province, but the Chief Surveyor did not accompany me. I was without any assistance from the Survey Department, and away for eight months under circumstances of great privation. I dare say I did a good deal of work not strictly necessary for a geological survey, but I brought back large collections from that expedition, which were useful in establishing the geological character of the country. That might have been giving to that part of the country a greater amount of attention out of three years than it was, perhaps, entitled to.

134. Was the main object of it a geological or topographical survey?—Geological survey; but there were large additions made to the topographical knowledge of the country.

135. Were you in charge?—Yes.

136. Were there any officers of the Survey Department with you, as it was to be a joint survey?—No, they did not carry it out. It was conducted by myself.

137. At whose instance was this survey undertaken?—At the Chief Surveyor's originally. Of course, I was glad to join in any scheme of that nature.

138. *Chairman.*] You think eight months was too long to devote to that survey, having regard to the period of three years over which your agreement extended. Were you engaged in any topographical work?—I desired that my time should be fully occupied in doing something. I do not think I occupied any time unduly in topographical work.

139. It is not whether there was more time occupied in topographical work, but whether the results, as to the topographical information of the country, were of material service to the Province?—Very; but I think they have been somewhat overlooked.

140. Then there was a valuable residue of work, beyond what was otherwise chargeable to the Province in connection with any expedition?—I may state that an expedition was recently sent out to the same place by the Province, but they were unable to overtake the work. The Superintendent was accompanied by a special reporter, and the reporter said it was unnecessary to go into any report, as the particulars of the country were correctly contained in my report. I think that expedition was thrown away, except as a means of again attracting attention to the district.

141. *Mr. Hall.*] You were engaged in another work, were you not, in connection with the New Zealand Exhibition in Dunedin? Had you anything to do with that?—I had a great deal.

142. How?—I found that I was appointed one of the Commissioners. The Superintendent was President, and the members of the Provincial Government members of the Board, and I think they were in the best position to judge of my work, although I did not approve of having an Exhibition on that scale at that period of the existence of Otago. I was glad of it personally, as it gave me an opportunity of seeing my collections, made during the period I was in Otago, and which were never unpacked until November, 1864. I had previously made application for a Museum, or place in which might be arranged the various specimens. I felt that any statement I made in this Colony would be taken only upon my own word if I did not leave certain data behind me. I was desirous to have some substantial proof of my services, but, owing to some opposition, that Museum was not built. It was not until the Exhibition that I had an opportunity of seeing the specimens from the time they were collected. I arranged them, described and catalogued them, and handed over a complete catalogue to the Provincial Government. I have not examined them since until eighteen months ago. I understand they were completely lost sight of, having been allowed to remain stored in some store, the Government having to pay about £90 on them.

143. *Chairman.*] Are there duplicates of all the specimens in the Museum here?—Certainly not. I think there were 550 duplicates, all of which were obtained by correspondence with the Provincial Government long after I left Otago. I took nothing with me that was the property of the Province. These were obvious duplicates that I wanted for further research.

144. What was the number of specimens in the Museum?—About 5,000, including specimens in every branch of natural history. There were only 550 duplicates. Those which were sent to Wellington by the trustees of the Otago Museum would not constitute a Museum.

145. Was it the tenth or the fifth part?—It was not the fiftieth part, in value. The museum that I left behind gave a complete exposition of every branch of natural history in the Province, and even far beyond what was in the Province alone, accompanied by a catalogue. Along with these were maps, a complete geological map, full details and analyses, with special examinations of the minerals, ores, rocks, and fibrous materials, all of which I left in Dunedin. Such a thing as a special detailed report would be impossible, without constant reference to such a collection during its preparation. After the experience I had when I sent in my first report I did nothing more than put the work into shape. Within three months after my arrival I went all over the gold fields, to which, together with the various coal fields, my special attention was drawn. I took the trouble of preparing a report in the clearest form—that of a section and explanatory notes. That was ordered by the Superintendent, Major Richardson, to be printed and published for public information. It was sent to the Survey Department, but has never been published to this day.

146. *Mr. Hall.*] Did you send in any others?—I sent in many more afterwards. I sent in a long special report of the expedition to the West Coast. I sent in full departmental reports, giving the results. These have been published, and a great many scientific documents from that work have also been made public. My printed reports occupy over 100 pages of the Provincial Government *Gazettes*.

147. Of what nature was the report which you made out three months after your arrival?—It was a section, showing the relations of the different rock formation in the Tuapeka District, and pointing out how a proper search for gold should be conducted. It showed the source of the gold, though more by inference than by observation; but my views have been borne out by extended workings.

148. What is your answer to the statement of the Superintendent, that you have not furnished a general report according to the terms of your agreement?—I do not see anything about a general report in the agreement?

149. *Chairman.*] You consider that you have complied with the agreement?—It would have been more satisfactory to me if, after leaving the Province, I had gone to England and furnished a full and particular report. A great portion of my work is embodied in the English translation of Hochstetter's work on New Zealand, and to have commenced my work here I should have had to work at great disadvantage. I had no books of reference, nor any scientific friends to consult. I had every drawback to contend with to prevent my publishing a work in a creditable style. I should also have had to extend my knowledge, as some of the conclusions I arrived at in Otago did not hold good in respect to the rest of the Colony. Such a work as I contemplated would have been for the benefit of the whole Colony; whereas, if I had furnished it at that time, it would have been comparatively useless after the lapse of some years.

150. I conclude that, from the absence of scientific works of reference and other circumstances, if you had attempted such a work you felt you would not be doing justice to your subject?—Yes; and to the Province.

151. Then there has been simply a postponement of a thing that will inevitably be done?—Certainly. If it is within the duty of the Committee I should wish to explain the plan of operations. A general sketch map [produced] will be published shortly, and with that will be a complete description of the general features of the geology of the whole Island. At the same time, I am completing a set of maps in sheets, giving full details of the geology of the country, and the result of investigations since 1864. In that way the detailed geology of the whole country will be published. These will include Hochstetter's map, and all other sources of information. It is evident that, at the time, the Province of Otago was not able to publish that map that I supplied to them, or they would have done so long ago. A geological survey, like all other surveys, culminates in a map, and not in a report.

152. Then you were not in a position to do the whole work at the time?—I have stated so.

153. *Mr. Hall.*] That map of Otago was handed over to the Province, accompanied by sections on a very large scale, showing the relative position of each rock formation in the Province?—Yes; it was so executed as to be easily understood by the most ordinary comprehension; but I did not see the section or the particular specimens when I was in Otago last.

154. Have you ever been applied to for any particular report?—After the termination of my agreement, I promised a full report in a popular form, and sent in a sketch of its contents. A great deal of this report has been published in other forms, but the report itself has not been published for the reasons given in the attached memo. I was asked for that report in October, 1865.

155. *Mr. Macfarlane.*] Has there been any complaint of your not having fulfilled your agreement?—No.

156. *Mr. Peacock.*] Did you give notice when leaving?—I am not sure. I may not have given notice, but I am sure the Provincial Government were quite aware of my intention, as there was correspondence on the subject of the disposal of the collections.

157. You were fully engaged the whole term of your agreement?—I did all I could in the time to render information available for the purposes required.

158. *Mr. Stevens.*] And the work was practically complete?—No; the time was not at all enough to complete it. When the matter was submitted to Sir Roderick Murchison, I remember he said that after five years I would then be able to commence a complete geological survey of the country. My own opinion is, and that of many other scientific men, that I did not only what was expected of me, but a great deal more.

159. *Mr. Macfarlane.*] Did you sign the agreement in Edinburgh?—Yes.

160. *Mr. Hall.*] Have you sent specimens and furnished information on the subject of your survey to persons in the mother country? A complaint of something to that effect has been made to the Committee?—Well, I may say that in London the scientific bodies levy what I may call a black mail upon us, expecting us to send not only specimens but our ideas and views on the subject of our researches; but I have carefully refrained from doing so when not in the interest of the Colony. So much so, indeed, that I fear that I have got into their black books. I have sent some letters and papers, but as to sending them my results systematically, I have, as I said, refrained from doing so. I have sent home papers, but they were in reference to topics of general interest. I, of course, sent home information to the Geological Society, in which I described the system of classification adopted in the map.

161. *Mr. Macfarlane.*] With regard to the instruments, what became of them afterwards?—They were my own. I took them with me. They have been used for the General Government service since.

162. This agreement prevents you going into the service of any other Government. Were the provincial authorities aware of your engagement with the General Government?—It was certainly with their knowledge. I did not think that it was necessary to get their formal sanction.

163. *Chairman.*] You have told us that, long before the termination of your engagement with the Province of Otago, you were arranging terms to enter the service of the General Government?—Six months before the Exhibition I was sent round to the several Provinces, and when I was in Auckland some correspondence took place upon the subject of obtaining my services for the whole Colony. It was with the Colonial Secretary of the time, Mr. Fox.

164. Was there any dissent on the part of the provincial authorities? Were they aware of it?—At that time I was in constant communication with the Superintendent, Mr. Harris, and the various members of the Executive. They knew all I was doing. In fact, I do not remember very much about this. If it comes to the letter of the agreement, it only precludes me from entering the service of any other Provincial Government. In fact, that refers to the agreement that if I were engaged by any other Province the Otago Government were relieved from paying my return passage to England.

165. *Mr. Hall.*] Which they were obliged to do otherwise?—Yes.

166. What would be the value of the work you have done in Otago to a general Geological Survey of New Zealand, supposing it to be incorporated as part thereof?—If Otago hands over all the plans and sections which are yet unpublished, and retains the collections of specimens in the Museum, and if proper allowance is made for the expenditure really for purposes not strictly connected with other local purposes—surveys, and things of that kind not strictly geological—I think about £5,000.

167. *Chairman.*] Supposing these to be included as part of the results belonging to the Colony?—There are some results that could not be given over. For instance, the impetus given to the development of certain gold fields,—the impetus given towards colonization in certain parts of the Province,—these, and other results of a similar nature, could not be handed over, nor estimated in money.

168. *Mr. Peacock.*] Supposing the work to be purely geological, what would be the value?—I cannot at present say. I shall furnish it in writing.

169. *Mr. Hall.*] Will you also include your opinion of the value of the collection which Otago retains?—If nothing were known of the geology of Otago, the formation of a collection of the same extent, and embodying the same amount of information in a practical way, could not be effected for less

than it cost originally. With the knowledge now possessed, the formation of a similar collection would be comparatively simple and inexpensive. It is impossible to place a value on such a collection. Thus, the collection of plants or the herbarium, from containing so large a number of the plants from which the original descriptions in *Hooker's Handbook of the New Zealand Flora* were drawn, must always remain a standard herbarium, and especially for the Otago Province. It could not be replaced if destroyed, and, therefore, cannot be valued. The same applies to the collection of rocks and fossils, of which the descriptions, analyses, or figures, have been, or will be published. Since reading the evidence of His Honor Mr. Macandrew and the Hon. Captain Fraser, I have only to say that I received the greatest kindness and assistance during my three years' work in Otago, to which I will always recur with pleasant recollections; and, as was natural under the circumstances, I never grudged any personal exertion or pecuniary sacrifice to advance the work. I did not look on my connection with the Otago Government as ceasing when I left it, and I have always been ready to advise and report on any matters when asked to do so. I had two assistants, in 1865-6 and 1868, at work in the Province since I took charge of the general survey. They were examining districts concerning which my information was defective. The only application I have received for advice from the Provincial Government during that period was in 1868, with regard to the likelihood of mining by what is termed deep-sinking being successful in Otago. I gave great attention to the subject, but I regret that I could not report favourably. I think it would be very desirable to continue the survey of the gold fields of Otago, as they have made great progress since my last examination; but it is only a question of increasing the staff for the purpose. The question of water supply is one for a mining surveyor; and at one time there was an excellent and large staff of mining surveyors in Otago, and their reports ought to furnish valuable information on this point. I have always thought it a loss to observation which the Government Mining Surveyors possess. I am quite ready to make further investigation of the country that I had not been empowered to direct, to some extent, the opportunities for geological investigations and report upon the Otago Gold Fields, and specially as regards waterworks, when called on, and to the extent of the means placed at the disposal of the department for the purpose. I shall be exceedingly glad to see Mr. Ulrich's services secured for the Colony, but I think he would do more work if in connection with the department, than if he had to find out everything for himself, as he would start with the experience we have acquired. He is a personal friend of my own, and was for many years on Mr. Selwyn's staff in Victoria.

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## APPENDIX.

## No. 1.

SIR,—

Wellington, 27th July, 1870.

Referring to my personal interview with you, and to the correspondence which passed between the preceding Government and myself, on the subject of Otago being reimbursed by the Colony in respect of the outlay which that Province has incurred in its Geological Survey, I would again respectfully solicit the attention of the Government to the fact that Dr. Hector's operations have cost the Government of the Province upwards of £13,000.

Now that the services of Dr. Hector have been applied to the rest of the Colony, and that a very large proportion of the cost of his staff is borne by Otago, it seems only fair that Otago should either be relieved of any portion of the expense of the Colonial Survey, or that the past cost of the Otago Provincial Survey should be borne by the Colony.

It must, I think, be obvious that there is a manifest injustice in practically compelling Otago not only to survey its own territory at its own sole expense, but to bear, in addition, the lion's share of the Geological Survey of the rest of the Colony.

I venture to hope, under all the circumstances of the case, that the amount in question, £13,000, of which, if necessary, I am prepared to furnish full particulars, will be refunded.

I have, &amp;c.,

J. MACANDREW,

Superintendent of Otago.

The Hon. the Colonial Treasurer, Wellington.

## No. 2.

SIR,—

Wellington, 9th August, 1870.

Adverting to my letter to you of 27th July ultimo, in respect of the amount expended by the Provincial Government of Otago upon the Geological Survey of that portion of the Colony being refunded, I have now to submit copy of agreement (enclosed herewith) between the Provincial Government and Dr. Hector.

I desire to call the attention of the General Government specially to articles 1 and 2 in said agreement, and to request that directions may be issued to Dr. Hector to the effect that the Geological Survey of Otago may be completed in terms of this agreement.

I have &amp;c.,

J. MACANDREW,

Superintendent of Otago.

The Hon. the Colonial Treasurer, Wellington.

## Enclosure.

Minute of Agreement between James Crawford, junior, and John Auld, both Writers to the Signet, Edinburgh, Agents in Great Britain for the Province of Otago, conform to power of attorney in their favour by His Honor the Superintendent of the said Province, dated 16th March, and registered in the books of Council and Session as a probative writ, 15th November, 1855, in favour of them and William Walter Cargill, of London, Esquire, and any one of them (severally), and him jointly and severally on the one part, and James Hector, M.D., 13, Gate Street, Lincoln Inn Fields, on the other part.

THE said parties, considering that the Provincial Council of the Province of Otago, being desirous of being possessed of a Geological Survey of the said Province, direct the said Agents to make inquiries regarding a suitable party for that purpose, and they having applied to Sir Roderick Murchison, he recommended to them to obtain the services of the said James Hector, and accordingly the said Superintendent and Provincial Council, on report by the said Agents, empowered them to enter into treaty and arrangements with him—and seeing that the said James Hector has agreed to undertake to perform the said survey on the conditions after specified:

Therefore, the said parties have contracted and agreed, and hereby contract and agree, as follows, viz. :—

1. That the said James Hector shall devote his whole time and capabilities in making and bringing to a completion, and furnishing the said Superintendent and Provincial Council with, an accurate Geological Survey of the said Province, and shall deliver the same, with all necessary plans, sections, and others, to the said Superintendent of the said Province of Otago; said engagement to continue for the period of three years from and after the 1st day of January, in the year 1862; and he shall from time to time, as he may be required, furnish to the said Superintendent reports of his proceedings; it being declared that the said James Hector shall be allowed to conduct his examinations of the Province in any manner he may deem best suited for a scientific geological reconnaissance, subject, however, to the approval of the said Council and Superintendent in the matter of expenses; and the said James Hector shall also be entitled to publish the results of his investigation for general scientific or geological purposes.

2. That the said James Hector shall, at his own expense, supply all the instruments, tools, and stationery of every kind, and all implements necessary in making said survey, which shall be of the best and most modern description, and suitable for the purpose.

3. That the said James Hector shall select an efficient assistant before leaving England, and shall engage him for the period of three years, from 1st day of January, in the year 1862, who shall be entirely under Dr. Hector's control, but shall receive the salary after mentioned from the said Council and Superintendent, together with the necessary expenses, not exceeding £10, that may be incurred by him in this country before leaving for Otago, in connection with the preparations for the survey.

4. That the said Superintendent and his successors in office, and the said Provincial Council, shall defray all their expenses of exploration and survey, and of maintenance when employed in the field, along with the equipment of men, horses, and other necessities.

5. That the said James Hector shall furnish, at the completion of the survey, specimens of all minerals descriptive of the results of the investigation made in virtue hereof, and of the mineralogical formation of the Province.

6. That the said James Hector shall conform to any Ordinance or instructions to be passed by the Superintendent and Provincial Council of the said Province, and any rules or by-laws made in pursuance thereof, regarding the said survey, declaring that nothing in this article shall prejudice his right to conduct his examination of the Province in any manner he may deem best, as stipulated by article first hereof.

7. That the said Superintendent and his foresaids, and the said Provincial Council, shall make payment in Great Britain to the said James Hector, or his duly authorized attorney, of a salary of £800 per annum. Declaring that in respect the said James Hector has been exclusively occupied in relation to the said survey since the 1st day of November last, said salary shall commence to run from that date, and shall continue till the expiration of the aforesaid period of three years mentioned in article first, and it shall be payable in four equal instalments of £200, commencing the first payment of the said salary as on the 1st day of February, 1862, for the quarter preceding, and so on quarterly thereafter; and they shall also make payment in Great Britain to the assistant to be engaged by him as aforesaid, or his duly authorized attorney, of a salary of £300 per annum for the foresaid (period) period of three years, mentioned in article third, payable in four equal instalments of £75, commencing the first payment thereof on the first day of April, 1862, for the quarter preceding; and the said salaries shall continue to be payable to the said parties respectively during the continuance of the engagement, and so long as they shall continue faithfully to discharge the duties incumbent on them by this agreement, but no longer.

8. That the said Superintendent and the said Provincial Council shall also pay the expenses of the passages of the said James Hector and his assistant as follows, viz: As regards the outward passage, £150 for that of the said James Hector, with power to him to proceed overland *via* Melbourne, for the purpose of visiting the Australian gold mines; and £70 for that of his assistant; and they shall further pay the direct homeward passages of the said James Hector and his assistant; but in the event of their being engaged, after the expiry of the said period of three years, in a way similar to the present engagement, by any of the other Provincial Governments in New Zealand, they or either of them who shall be so engaged shall not be entitled to be paid their or his home passage by the said Superintendent of Otago. Providing and declaring, that it shall not be in the power of the said James Hector or his said assistant to accept of any engagement from any of the said Provincial Governments during the currency of this agreement, even although such engagements are not to commence till the expiry of this agreement, without giving six weeks' notice in writing to the said Superintendent, and, if required by him, shall be bound to continue their services to said Superintendent in preference to the other Provincial Governments on equal terms, or on such terms as may be agreed on.

9. Both parties bind and oblige themselves to perform their respective parts of the premises to each other under the penalty of £500 sterling, to be paid by the party failing to the party performing, or willing to perform, over and above performance.

In witness whereof.

### No. 3.

MEMORANDUM respecting the Engagement of Dr. HECTOR with the Provincial Government of Otago. IN December, 1861, Dr. Hector agreed with Messrs. Crawford and Auld to make a Geological Survey of the Province, and deliver the same, with all necessary plans, sections, &c., to the Superintendent; the survey to be completed in three years from the 1st January, 1862. Also to furnish, periodically, reports of his proceedings.

Dr. Hector arrived in the Province in March, 1862, and was engaged in the survey until March, 1865, occasionally during that period furnishing the Government with reports as to his progress.

At that date, the period of his agreement having previously expired, he left the service of the Province for that of the General Government, and has never yet furnished the Superintendent with the result of the survey.

Under the last clause in his agreement Dr. Hector is liable to a penalty of £500 for having failed to carry out the terms thereof.

Dunedin, 20th August, 1870.

W. A. TOLMIE,  
Deputy Superintendent.

### STATEMENT of Expenditure on account of Geological Survey of the Province of Otago under Dr. JAMES HECTOR.

	£	s.	d.
Passage money of Dr. Hector and assistant	...	...	220 0 0
Salary paid Dr. Hector	...	...	3,153 6 8

	£	s.	d.
Salary paid Assistants ... ..	3,779	1	4
Return passage money allowed Mr. Wood ... ..	70	0	0
Instruments ... ..	12	17	6
Typical specimens ... ..	46	8	5
Equipment of survey parties ... ..	1,614	6	8
Wages of labourers ... ..	611	11	11
Extra hands and Museum ... ..	258	15	5
Interest and exchange on drafts sent to London ... ..	41	16	2
Cartage, fuel, furniture, travelling expenses, &c. ... ..	352	2	5
Buildings ... ..	1,287	5	4
West Coast expedition; fitting out "Matilda Hayes" and provisioning party ... ..	2,071	13	6
Relief to West Coast party ... ..	371	11	8
	13,890	17	0

ALFRED F. OSWIN,  
Sub-Treasurer.

Provincial Treasury, Dunedin, 18th August, 1870.

#### No. 4.

#### MEMORANDUM concerning the Geological Survey of Otago.

I LEFT England, having engaged one assistant, Mr. Charles Wood, in January, 1862, and reached Otago in April, from which date the survey commenced, and continued for three years, until 30th March, 1865. Mr. Wood, who was selected by the authorities at the School of Mines to relieve me of the chemical and physical analyses, and the description, &c., of specimens, so as to allow me more time for field work, arrived in June, 1862, but in bad health. After a few months leave of absence in Victoria he again attempted his work, but broke down; and in December, 1862, had to leave for Melbourne, where he was employed in the Government Laboratory, for a few months, until his death. Deprived of Mr. Wood's services, I had at first to engage assistants in the Colony and teach them their work, in some cases, I regret to say, at a fruitless loss of time and money. I was at last fortunate in getting a zealous, practical naturalist in Mr. Buchanan, who was engaged as draftsman in April, 1863, and who was of great assistance as a collector.

Mr. Skey, also, by assiduous application, soon became extremely useful in the Laboratory, and relieved me of work in that branch. Mr. Gore, as clerk and meteorologist, completed my staff in Otago, and the same gentlemen have been transferred to the General Government service.

The distribution of the work over the three years of the survey was as follows:—

1862.—During May, June, and July, examined the gold fields then known, and the Eastern District of the Province from the Mataura to Oamaru, and as far into the interior as the Dunstan Gorge. The first results of this examination were communicated to the Government in the form of sections illustrative of the structure and distribution of the formations in the eastern part of the Province, especially as bearing on the value and nature of the auriferous and brown coal deposits; and also in a memorandum pointing out the manner of the distribution of the auriferous drifts, and warning the miners against misdirecting their efforts by associating those drifts with the existing drainage systems.

In September and October I examined the districts in the neighbourhood of the Wanaka and Wakatipu Lakes, and communicated a short report of my journey.

1863.—During January, February, and March, the mountains between the Wakatipu and Wanaka Lakes, the West Coast at Jackson's Bay, and the Greenstone Pass, were examined, and the general results made public.

From April to the end of the year I was engaged in the South and West Districts, and on the West Coast of the Province, of which expedition a report was published. During the same period the districts I had examined during the previous year were again visited by Mr. Hackett, for the purpose of collecting full sets of specimens according to the classification I had adopted.

1864.—March, April, and May were devoted to the further examination of the Eastern Districts, and in revisiting the gold fields. In June and July, visited the other Provinces of New Zealand as Commissioner for the Exhibition, with the sanction of the Provincial Government.

August, September, and part of October were spent in a boat expedition, in the course of which I examined the South-east District of the Province, between the Molyneux and the Mataura Rivers. During the remainder of the year I was principally occupied for the Exhibition, which was opened in 1865, and for the first time I was enabled to arrange the extensive collections in every branch of natural history which had been accumulated during the progress of the survey. These collections, numbering over 5,000 specimens, were fully arranged and displayed in the Exhibition, with illustrative maps, diagrams, and sections, and with descriptive information.

The results of the technical examinations of the various useful minerals and other substances, and an abstract of all that had been ascertained respecting the value of the economic products of the Provinces, was published in the Jurors' Reports, and Appendix thereto, the preparation of which occupied much of my time during the last three months in Otago.

From so much time having been spent in the field, and from want of accommodation, the arrangement and study of the collections, on which alone reports having practical value can be founded, had fallen into arrear; and, since leaving Otago, I have felt it best, for the interest of the Colony, that I should continue further field investigations before committing myself to final conclusions.

I have now examined, though only in a cursory manner, nearly every part of the Colony, and the results, in the form of a complete catalogue of the Museum, together with a general geological map, with explanations, are now in the press. I do not, however, consider that any part of the Colony has

yet been sufficiently surveyed geologically, either for scientific or practical purposes; indeed, we are now only approaching a correct appreciation of the natural classification of the formations which enter into the structure of these Islands, and of the indications on which we may rely when investigating its mineral resources.

JAMES HECTOR.

NOTE of Expenditure, by the Province of Otago, on account of Geological Survey.  
I HAVE not the full data beside me for giving the detailed expenditure of the Provincial Government for the Geological Survey, but the following, I believe, is nearly correct:—

							£
Preliminary expenses	...	...	...	...	...	...	580
First year—Salaries	...	...	...	...	...	...	1,650
Expenses	...	...	...	...	...	...	790
Second year—Salaries	...	...	...	...	...	...	1,500
Expenses	...	...	...	...	...	...	615
Third year—Salaries	...	...	...	...	...	...	1,750
Expenses	...	...	...	...	...	...	665
							£7,550
Extra expense for West Coast expedition	...	...	...	...	...	...	1,162
							£8,712

The above includes the preparation of collections for the Exhibition, and other extra expenses, which being deducted, I consider would leave £6,500 that may be fairly considered as having been expended by the Otago Government on the Geological Survey.

JAMES HECTOR.

REMARKS on the Amount of Expenditure for the Geological Survey of Otago.  
I AM not in a position to question this statement, and although I feel surprised at the amounts, I have no reason to doubt that they are correctly stated as they appear in the Treasury books.

The reason for the discrepancy between this amount and the memo. I submitted to the Committee is in a great measure owing to the former containing sums that do not appear to me to be fairly chargeable against the survey, and of these I append a note.

Although my attention has been only requested to the statement of amount, I cannot refrain from expressing my opinion that the memorandum attached to it does not correctly express either the letter or spirit of the agreement I entered into.

I considered I was to work for three years at a geological reconnoissance of Otago, and give the results I had obtained. Even with our present increased knowledge of the topography and geology of the country, I could not single-handed make a geological survey in three years.

Owing to the excited state of the public mind at that period, from the constant fresh discovery of gold fields, I had to push forward my explorations rapidly, and to employ assistants for the purpose of collecting information and specimens, and, in fact, my individual exertions were replaced by a department. I cannot say that I was directed to do this, but I am sure that it would not have been satisfactory to the Government or public at the time if I had not. At any rate, the result was beneficial to the Province, as I never could have obtained the results I did in the time, had my operations been limited to the scale originally contemplated.

It must be remembered that gold had not been discovered in Otago when it was first proposed to me to undertake the survey. Under these circumstances, the expenditure was greatly beyond what I previously estimated.

*Items which should not be regarded as expended for the Survey.*

	£	s.	d.
Mr. Wood (This was presented to him when he was invalided, to enable him to seek recovery in Australia, where he died.)	70	0	0
Instruments (I do not know of this, as I brought all instruments, &c., with me.)	12	17	6
Typical collections (I was instructed to purchase them in London, as the nucleus of the Museum.)	46	8	5
Extra hands and Museum (I think must have been in connection with the Exhibition.)	258	15	5
Interest on drafts	41	16	2
Buildings (The buildings I had were mere sheds, except the Laboratory, which was partly brick. This sum must include the Observatory and cottage. All those buildings are still in use at the present time.)	1,287	5	4
West Coast expedition (I cannot see how this sum is so large. The current expenses for hire of vessel and wages was under £120 per month for eight months. Marine stores, boat, &c., which were returned to the storekeeper, must be charged without a drawback. The difference between what I know to have been spent and the sum stated is about £700.)	700	0	0
Relief to West Coast expedition (I know nothing of this. I never was relieved, or ever required it.)	371	11	8



	£	s.	d.
Value of horses sold, furniture, fittings, &c., returned to the storekeeper, at least	400	0	0
Extra salaries ... ..	210	0	0
(Salary paid to meteorological observer, an office that existed before I came to the country, and still is continued.)			
Extra salary paid to myself for eighteen months, but not at my desire or suggestion... ..	...	300	0 0

£3,698 14 6

JAMES HECTOR.

## No. 6.

MEMORANDUM of Reports, Maps, &c., relating to the Geological Survey of Otago, furnished by  
Dr. HECTOR.

27th August, 1862.—Relative to the distribution of Gold in the Province.—(Published.)

25th September, 1862.—Progress Report.—(Published.)

25th April, 1863.—Report of first Expedition to West Coast.—(Published in newspapers.)

8th June, 1863.—Progress of West Coast Expedition.—(Published.)

5th November, 1863.—Report of second West Coast Expedition.—(Published.)

13th April, 1864.—Progress Report, with full details respecting the minerals, coals, fossils, plants, &c., which had been discovered up to date.—(Published.)

21st October, 1864.—Progress Report.—(Published.)

Various official letters published in newspapers.

January, 1865.—Descriptive Catalogue of Geological and other Collections in the Exhibition.

5th February, 1866.—Various Papers in the Jurors' Reports, and Supplement to Class I., which gives a minute account of mineral and other natural productions of the Colony then known, and especially of those in Otago.

*Maps, &c. (Unpublished.)*

April, 1865.—Geological Map of the Province of Otago—scale 8 miles to inch—showing results of reconnoissance survey up to date, and giving also a large amount of original topographical details. (This map was specially compiled for the Geological Survey, as at that time no complete topographical map of the Province was in existence.)

Map of the North-west District of the Province, showing the surface configuration, with special relation to the opening of communication with the land fitted for settlement on the West Coast.

Ten Geological Sections illustrating the structure of the Province.

Seventeen large Sketches and Views illustrative of the geological features of Otago scenery.

J. HECTOR.

1. Name

2. Age

3. Date of birth

4. Place of birth

5. Nationality

6. Religion

7. Marital status

8. Education

9. Occupation

10. Address

11. Telephone

12. E-mail

13. Signature

14. Stamp

15. Date

16. Place

17. Signature

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